Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An illumination system ~~for EUV lithography for illuminating~~ configured to illuminate a field in a field plane, the illumination system comprising:

at least one optical integrator which splits a light bundle emitted by a light source into a plurality of light channels each having a light intensity; and

a filter in the light path from the light source to the field plane, with the filter having filter elements which are configured in such a way that the light intensity of at least one light channel is reduced in the light path after the filter element,

wherein the illumination system is a configured to be used in EUV microlithography.

2. (Previously Presented) The illumination system as claimed in claim 1, wherein a reduction of the light intensity of the at least one light channel after the filter element is within > 0 and < 100% of the light intensity of the respective light channel before the filter element.

3. (Previously Presented) The illumination system as claimed in claim 2,wherein a reduction of the light intensity of the at least one light channel after the filter element is within > 25% and < 80% of the light intensity of the respective light channel before the filter element.

4. (Previously Presented) The illumination system as claimed in claim 2, wherein the at least one light channel illuminates a surface of the filter element and that the filter element is arranged such that the reduction of the light intensity is different at different places of the illuminated surface.

5. (Previously Presented) The illumination system as claimed in claim 2, wherein the at least one light channel illuminates a surface of the filter element and the filter element is arranged such that the reduction of the light intensity is the same at different places of the illuminated surface.

6. (Previously Presented) The illumination system as claimed in claim 1, wherein for reducing the light intensity of at least one light channel, the filter element comprises a transmission filter element associated with the light channel.

7. (Previously Presented) The illumination system as claimed in claim 1, wherein the filter element for reducing the light intensity of at least one light channel comprises a reflective optical component which is associated with said light channel and comprises a reflectivity adjusted to the reduction.

8. (Currently Amended) The illumination system as claimed in claim [[1]] 6, wherein the transmission filter associated with the light channel is a variable neutral grey filter.

9. (Currently Amended) The illumination system as claimed in claim [[7]]] 8, wherein the neutral grey filter comprises a variable line and/or point density, so that the grey scale values of the neutral grey filter can be set by the line and/or point density.

10. (Previously Presented) The illumination system as claimed in claim 1, wherein the filter element for reducing the light intensity of at least one light channel comprises a diaphragm associated with the light channel.

11. (Currently Amended) An illumination system ~~for EUV lithography for illuminating~~ configured to illuminate a field in a field plane, the illumination system comprising:

at least one optical integrator;

at least one optical component which is arranged in the light path from a light source to the field plane to be illuminated between the optical integrator and the field plane to be illuminated, wherein the optical component is sufficiently corrected in an aplanatic way; and

at least a filter element which is configured and arranged in such a way that a substantially homogeneous illumination of the field in the field plane is achieved,

wherein the illumination system is a configured to be used in EUV microlithography.

12. (Currently Amended) The illumination system as claimed in claim 11, wherein the optical component is corrected in an aplanatic way such that in the field plane the σ variation is less than 10%~~, especially preferably less than 2%~~.

13. (Previously Presented) The illumination system as claimed in claim 1, wherein the field is a ring field with a radial and azimuthal extension.

14. (Previously Presented) The illumination system as claimed in claim 13, wherein the optical element comprises at least a field forming optical component and the optical component is sufficiently corrected in an aplanatic way at least in the radial alignment of the pupil image.

15. (Previously Presented) The illumination system as claimed in claim 1, wherein the filter element is arranged in the light path from the light source to the field plane close to the optical integrator as a separate component, or is integrated in the optical integrator.

16. (Previously Presented) The illumination system as claimed in claim 1, wherein the filter element is arranged in the light path from the light source to the field plane in front of and close to the optical integrator.

17. (Previously Presented) The illumination system as claimed in claim 1, wherein the filter element is arranged in the light path from the light source to the field plane after and close to the optical integrator.

18. (Previously Presented) The illumination system as claimed in claim 1, wherein the optical integrator comprises at least a first optical element with a plurality of first raster elements.

19. (Previously Presented) The illumination system as claimed in claim 18, wherein the optical integrator comprises a second optical element with a plurality of second raster elements.

20. (Previously Presented) The illumination system as claimed in claim 18, further comprising a filter with a plurality of filter elements arranged in the light path from the light source to the field plane between the first optical element with a plurality of a first raster elements and the second optical element with a plurality of second optical raster elements.

21. (Previously Presented) The illumination system as claimed in claim 11, wherein the filter element is a transmittive filter element with variable transmission.

22. (Previously Presented) The illumination system as claimed in claim 11, wherein the filter element is a reflective filter element with variable reflectivity.

23. (Previously Presented) The illumination system as claimed in claim 21, wherein the filter element is a variable neutral grey filter.

24. (Previously Presented) The illumination system as claimed in claim 23, wherein the neutral grey filter comprises a variable line and/or point density, so that the grey values of the neutral grey filter can be set through the line and/or point density.

25. (Previously Presented) The illumination system as claimed in claim 1, wherein the filter element is changeable.

26. (Currently Amended) A projection exposure system ~~for EUV microlithography~~, comprising:

~~with~~ a light source,

an illumination system as claimed in claim 1 ~~for illuminating~~ configured to illuminate a field in a field plane, and

a projective objective ~~for projecting~~ configured to project an object arranged in the field plane into an image in an image plane,

wherein the projection exposure system is configured to be used in EUV microlithography.

27. (Currently Amended) A scanner type projection exposure system ~~for EUV microlithography~~, comprising:

(a) a light source;

(b) an illumination system that includes:

at least one optical integrator;

at least one optical element which is arranged in the light path from the light source to a field plane to be illuminated between an optical integrator and a field plane to be illuminated, with a field being illuminated in the field plane which has an extension in a scanning direction and an illumination intensity perpendicular to the scanning direction, wherein the optical element is sufficiently corrected in an aplanatic way; and

a plurality of filter elements which are configured and arranged in such a way that a substantially homogeneous illumination of the field in the field plane perpendicular to the scanning direction is achieved, so that the uniformity errors of the scanning energy in the field plane are less than ± 3%, ~~preferably less than ± 1%, especially preferably less than 0.5%,~~

with the scanning energy being the illumination intensity of the field integrated in the scanning direction; and

(c) a projection objective for projecting an object arranged in the field plane into an image in the image plane,

wherein the scanner type projection exposure system is configured to be used in EUV microlithography.

28. (Previously Presented) A method for producing micro-structured components by using a projection exposure system as claimed in claim 26.

29. (Currently Amended) An illumination system ~~for EUV lithography for illuminating~~ configured to illuminate a field in a field plane ~~with light of a wavelength in the region between about 11 nm and about 14 nm~~, the illumination system comprising:

at least one optical integrator which splits a light bundle emitted by a light source into a plurality of light channels each having a light intensity, and

a filter situated in the light path from the light source to the field plane, with the filter having filter elements which are configured in such a way that the light intensity of at least one light channel is reduced in the light path after the filter element,

wherein the illumination system is configured to be used in EUV microlithography with light of a wavelength in the region between about 11 nm and about 14 nm.

30. (Currently Amended) An illumination system ~~for EUV lithography for illuminating~~ configured to illuminate a field in a field plane, the illumination system comprising:

at least one optical integrator which splits a light bundle emitted by a light source into a plurality of light channels each having a light intensity, wherein the optical integrator is a reflective honeycomb condensor; and

a filter situated in the light path from the light source to the field plane, with the filter having filter elements which are configured in such a way that the light intensity of at least one light channel is reduced in the light path after the filter element,

wherein the illumination system is configured to be used in EUV microlithography.

31. (Previously Presented) The illumination system of claim 30, wherein the reflective honeycomb condensor comprises a first reflective facetted optical element and a second reflective facetted optical element

32. (Previously Presented).The illumination system of claim 31, wherein the first reflective facetted optical element comprises a first reflective raster element and the second facetted optical element comprises a second reflective raster element.

33. (Previously Presented) The illumination system as claimed in claim 30, wherein the filter element for reducing the light intensity of at least one light channel comprises a reflective optical component which is associated with said light channel and comprises a reflectivity adjusted to the reduction.

34. (Previously Presented) The illumination system as claimed in claim 30, wherein the filter element for reducing the light intensity of at least one light channel comprises a diaphragm associated with the light channel.

35. (Previously Presented) A projection exposure system for EUV microlithography, with a light source, an illumination system as claimed in claim 30 for illuminating a field in a field plane, a projective objective for projecting an object arranged in the field plane into an image in an image plane.

36. (Currently Amended) An illumination system ~~for EUV lithography for illuminating~~ configured to illuminate a field in a field plane ~~with light of a wavelength in the region between about 11 nm and about 14 nm~~, the illumination system comprising:

at least one optical integrator;

at least one optical component which is arranged in the light path from a light source to the field plane to be illuminated between the optical integrator and the field plane to be illuminated, wherein the optical component is sufficiently corrected in an aplanatic way; and

at least a filter element which is configured and arranged in such a way that a substantially homogeneous illumination of the field in the field plane is achieved,

wherein the illumination system is configured to be used in EUV microlithography with light of a wavelength in the region between about 11 nm and about 14 nm.

37. (Currently Amended) An illumination system ~~for EUV microlithography for illuminating~~ configured to illuminate a field in a field plane, the illumination system comprising:

at least one optical integrator; wherein the optical integrator is a reflective honeycomb condensor,

at least one optical component which is arranged in the light path from a light source to the field plane to be illuminated between the optical integrator and the field plane to be illuminated, wherein the optical component is sufficiently corrected in an aplanatic way; and

at least a filter element which is configured and arranged in such a way that a substantially homogeneous illumination of the field in the field plane is achieved,

wherein the illumination system is configured to be used in EUV microlithography.

38. (Previously Presented) The illumination system of claim 37, wherein the reflective honeycomb condensor comprises a first reflective facetted optical element and a second reflective facetted optical element

39. (Previously Presented) The illumination system of claim 38, wherein the first reflective facetted optical element comprises a first reflective raster element and the second facetted optical element comprises a second reflective raster element.

40. (Previously Presented) The illumination system as claimed in claim 37, wherein the filter element for reducing the light intensity of at least one light channel comprises a reflective optical component which is associated with said light channel and comprises a reflectivity adjusted to the reduction.

41. (Previously Presented) The illumination system as claimed in claim 37, wherein the filter element for reducing the light intensity of at least one light channel comprises a diaphragm associated with the light channel.

42. (Currently Amended) A projection exposure system ~~for EUV microlithography~~, comprising:

~~with~~ a light source,

an illumination system as claimed in claim 37 ~~for illuminating~~ configured to illuminate a field in a field plane, and

a projective objective ~~for projecting~~ configured to project an object arranged in the field plane into an image in an image plane,

wherein the projection exposure system is configured to be used in EUV microlithography.